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Technical Services Bulletin

Number: SB0002 *(Page 1 of 2)*

Date: February 2, 2000

Subject: *GOLD Oil Boiler Primary Burner Controls #60200-02*

In an effort to provide the industry with the best available technology for clean efficient combustion of fuel oil, Weil-McLain has standardized the GOLD Oil boiler burner control offering to include the Carlin 60200-02 primary control and 14,000 volt solid state ignitor. Listed below are some helpful tips for understanding these new controls.

Carlin 60200-02 Primary Control Standard Features / Benefits:

- **Interrupted Duty –** Turns off the ignition ignitor once the flame is established reducing energy consumption and minimizing component wear.
- **Self-Diagnostic Check –** On each call for heat, control performs a 4-second check of internal circuitry. Helps prevent burner runaway in the event of a welded set of motor contacts.
- **10 Second Valve-On-Delay (Prepurge) –** Allows the burner motor and fuel oil pump to come fully up to speed and pressure prior to opening the oil solenoid valve and igniting the oil which provides cleaner startups.
- **10 Second Motor-Off-Delay (Postpurge) –** Closes solenoid valve cutting off fuel supply while keeping the motor and blower on to complete combustion process, virtually eliminating smoke on shutdown.
- **15 Second Trial For Ignition –** If oil fails to ignite in the first 15 seconds, control will lock out reducing potential for oil soaked chambers.
- **Flame Stabilization Period –** Ignitor / spark remains on for 10 seconds after trial for ignition period ends.
- **Recycle –** If control detects a flame failure, the burner will shut off in 1.3 seconds after loss of flame and then automatically commence with a 65-second recycle period after which control will go through another trial for ignition cycle.
- **Latch up –** If control sees 3 consecutive lock-outs on the same call for heat, control will enter latch-up potentially eliminating flooded chambers from repeated homeowner attempts of pushing reset button.
- **Alarm Contacts –** Close when control is in a lock-out or latch-up condition. Control may be connected to a separate security system for notification of a no heat situation.
- **Warranty –** 3 years.

Primary Control Sequence of Operation:

1. Call for heat initiated.
2. Microprocessor performs a 4-second diagnostic self-check of internal control circuitry.
3. 1-second pre-ignition (ignitor energized with spark on).
4. 10-second valve-on-delay (prepurge).
5. Solenoid valve is energized allowing fuel to flow to nozzle and spark.
6. 15-second trial for ignition. If no flame is established, control will lock out after 15 seconds.

7. 10-second flame stabilization period (flame established / spark remains on). If flame is established and extinguished, the control detects a flame failure and will shut off the fuel supply within 1.3 seconds. The control then enters a 65-second recycle period. After 65 seconds, the control returns to the call for heat and begins another diagnostic self-check.
8. Ignitor shuts off (spark off) – burner is now in normal cycle.
9. Call for heat is satisfied. Solenoid valve is deenergized extinguishing flame.
10. 10-second motor-off-delay (postpurge).
11. Burner off.

Primary Control LED Status Indicators:

- **Amber Light "On Steady":** Control is conducting a 4-second diagnostic self-check of internal circuitry.
- **Amber Light "Flashing":** Control has detected a failure in the diagnostic self-check.
- **Red Light "On Steady":** Control is in lock-out. Reset button must be depressed for 1 second to remove from lock-out condition.
- **Red Light "Flashing":** Control is in recycle. Control has detected a loss of flame during the run cycle. Burner is off and control is performing a 65-second recycle after which the burner begins sequence of operation over and will try again for ignition.
- **Red and Amber Lights "On Steady":** Control is in latch-up. The control has experienced 3 consecutive lock-outs in one call for heat. To remove from latch-up, depress the reset button for 30 continuous seconds. After 10 seconds of depressing the reset button, the red and amber lights will begin to flash alternately for the remaining 20 seconds. After depressing the reset button for the full 30 seconds, the red and amber lights will go out. Remove your finger from the reset button and the control will return to "call for heat" position.

Carlin CCT4100 14,000-Volt Solid State Ignitor Standard Features / Benefits:

- **14,000 Volts –** provides stronger / hotter spark.
- **Energy Efficient –** uses only 40 VA versus approximately 240 VA standard.
- **Constant Secondary Voltage –** does not fluctuate with changes in primary voltage supply.
- **Does Not Weaken Over Time –** either works or it doesn't.
- **Lighter –** weighs several pounds less than a standard transformer.
- **Standard Off the shelf Part –** no more special OEM transformer specifications. It is backward compatible.
- **Warranty –** 3 years.

For additional information on the operation of the controls including possible causes of lock-out and latch-up, refer to the instruction manual supplied with each burner.

Attachments: WGO, WTGO, SGO & SGO-W Wiring Addendum #550-141-851/0599